

Behavioral Measurement of Sensation Seeking Shows Positive Association with Risky Behaviors

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Sensation seeking (SS; the tendency to seek out experiences that are highly varied, novel, and intense, and the willingness to take risks in order to have such experiences) is strongly related to risky behavior. However, most prior research has relied on self-report assessments of SS, which are limited by subject biases and lack of insight. This study is designed to develop and optimize a behavioral assessment of SS to be used in future brain imaging studies, and to evaluate the relationship of this behavior with self-reported SS and risky behaviors. The novel behavioral SS task employed in this study presents participants with olfactory sensory stimuli and assesses the individual's preference to seek varied, novel, and intense sensations, with the risk of an unpleasant stimulus ("Varied"; e.g. strong orange, rose, linalyl acetate, and propionic acid) vs. weaker and mildly pleasant sensations ("Standard"; weak vanillin, orange, and rose) across two twenty-trial sessions. Hypothesis: greater preference for "Varied" odors will correlate with self-reported SS and risky behaviors. Odorants are presented as a 1-sec burst via an air-dilution olfactometer within a filtered airstream. Participants are being recruited from the Introduction to Psychology class at IUPUI (currently $n = 11$ total, mean age (SD) = 21.2, (5.4), $n = 8$ women, $n = 7$ Caucasian). The mean preference for "Varied" was 50%, range = 28-75%. Preference for "Varied" showed a moderate relationship with negative risky behaviors ($r = 0.35$) and SS (Zuckerman Thrill/Adventure seeking subscale; $r = 0.48$), suggesting that the behavioral task is associating as expected with these self-report variables. These preliminary data suggests the feasibility of behavioral SS assessment; behavioral characterization will permit examination of how SS influences brain activity, without the limitations of self-report. How SS affects choice of and reactions to new and exciting experiences has important research and clinical implications.

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